

### **REMARKS/ARGUMENTS**

Claims 1-38 are pending. Reconsideration is respectfully requested.

#### **1. Rejection of Claims 1-38 Under §103(a)**

Claims 1-38 stand rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 4,538,299 (DeForest) in view of May 28-31, 2002, Vol. 2350/202, pages 1-17 (Schaffalitzky). The Applicant respectfully traverses this rejection.

Independent claims 1 and 20 recite a system and method for locating a boundary of an object by:

- 1) forming an image of the object,
- 2) identify groups of the image pixels that represent edge segments of the object,
- 3) form patches around the image pixel groups that are each dimensioned and positioned to entirely contain one of the image pixel groups,
- 4) performing a patch merge process that merges any two of the patches together that meet a predetermined proximity threshold relative to each other to form a merged patch that is dimensioned and positioned to entirely contain the two merged patches, and
- 5) continuing the merge process for any of the patches and the merged patches meeting the predetermined proximity threshold until none of the patches and the merged patches meet the predetermined proximity threshold.

This technique more reliably groups together edge segments representing the boundary of a single particle, without unnecessarily including edge segments that are either non-particles or should be associated with another particle, thus allowing any gaps between edge segments from a single particle to be filled in to form a single and continuous particle edge (see specification page 8, lines 20-25).

The Examiner acknowledges on pages 2-3 of the Office Action that DeForest fails to disclose the patch formation and merge of claims 1 and 20. The Examiner states, however, that Schaffalitzky discloses the claimed patch formation and merge of claims 1 and 20 (citing the

abstract, pp. 3-4, 6, and Figs. 5-6), and that it would have been obvious to use the Schaffalitzky patch formation/merge in DeForest's automatic location of the object boundary. The Applicant respectfully disagrees that Schaffalitzky discloses the claimed patch formation/merge.

Schaffalitzky discloses a technique for matching together multiple views of the same object. A three stage process is disclosed that indexes the images based upon invariant image patches therein, and refining those matches so that images of the same object can be viewed coherently (see page 2). This allows the establishment of relative view points even when no ordering information is provided, and to enable efficient multiple view matching (see abstract). The result is to take "an unordered set of images, divide the data into clusters of related (i.e. from the same scene) image and determine the viewpoints of each image, thereby spatially organizing the image set" (see page 1).

It is submitted that determining spatial overlap of images, and ordering them for viewing, in no way teaches or suggests forming patches around image pixel groups representing edge segments of an object, and performing a merge process as recited in claims 1 and 20 until none of the patches and merged patches meet a proximity threshold. Both the process and the results differ. The Schaffalitzky process searches for invariant image patches among different images of the same object, which results in an index that sets forth the order in which the separate images are to be viewed (see three stages solution set forth on page 3). In contrast, the claimed device/process creates patches around image edge segments, and searches for and merges proximate patches, which results in a final merged patch that encompasses all the edge segments to be considered as part of a single object. Therefore, since the process and the end results are different, it is respectfully submitted that Schaffalitzky does not teach or suggest the patch formation and merge of claims 1 and 20.

Because neither cited reference teaches or suggests the claimed patch formation and merge, it is respectfully submitted that claims 1 and 20 are not rendered obvious by DeForest in view of Schaffalitzky, and that this rejection should be withdrawn.

With respect to claims 2-19 and 21-38, these claims depend from claims 1 or 20, and are therefore considered allowable for the reasons set forth above. Moreover, because neither DeForest or Schaffalitzky teach or suggest the claimed general patch formation and merge as recited in independent claims 1 or 20, they certainly do not teach or suggest the particular and more specific features of the patch formation and merge as recited in these dependent claims.

For the foregoing reasons, it is respectfully submitted that the claims are in an allowable form, and action to that end is respectfully requested.

Respectfully submitted,

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